ANTEROLATERAL IMPINGEMENT OF THE ANKLE: ULTRASONOGRAPHY EVALUATION AND ULTRASOUND-GUIDED THERAPY

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INTRODUCTION

Anterolateral pain following inversion injuries.

**Causes:** filling of the anterolateral recess
pathologic hypertrophic cicatrization of the ATFL +++
(osseous)
-/+ instability -/+ chondral lesions

**Histology:** synovitis / fibrous bands / meniscoïd lesion

**Radiological assessment:** MR, MR-Arthrography or CT-Arthrography

**Objectives:**
To describe the use of Ultrasonography in diagnosis
To know the efficacy of ultrasound-guided steroid injection in management of patients.


MATERIALS AND METHODS
Subjects and methods

Prospective study since May 2006

27 patients referred by single ankle surgeon (SJ) for suspicion of anterolateral impingement

Differential diagnosis of anterolateral ankle pain were previously excluded: ATFL disruption, fibular tendinopathies, occult fractures, Chopart injuries, sub-talar disease

Mean age: 32 years-old (range 17-57 - M:13/F:14)

Ultrasonography of the anterolateral recess.

Items: thick ATFL / Hypertrophic Synovial fibrous bands / Nodule / Fluid / Hyperemia at doppler
US-guided therapy: METHOD

Standard aseptic technique

**US-guidance** of the needle toward the abnormal area of the capsule

Infiltration with 1,5 ml cortivazol (Altim® 3,75mg; Roussel-Diamant) and 2 ml 1% lidocaïne (Xylocaïne®; AstraZeneca) was performed.

No side-effect

**Follow up** by surgeon visit at 4 weeks

positive test: no more pain at Week 4 (patient advised to come back if pain occurs)

short-term positive test: pain relief only for few hours or days

negative test: none effect.

Median follow-up: 7,1 months
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RESULTS
Ultrasonography: Synovitis / Thick ATFL

Capsular thickening (ATFL)
19 patients: 70.4%

Synovitis:
fluid in the AL recess +/- doppler
14 patients: 51.8%
Inflammatory aspect of synovial fringes
Linear and endoarticular hyperechoic bands

11 patients: 40.7%
Ultrasonography: Fibrous nodule

Endoarticular
Hyperechoic nodule

18 patients: 66,6%

All patients (27/27) had either fibrous bands or and nodule in the anterolateral recess.
# RESULTS

US-guided therapy

Patient outcome at 4 weeks:

- complete pain relief: 9 patients (33%)
- recurrent pain after pain relief: 9 patients (33%) => arthroscopic debridement
- none effect: 5 patients (4 with chondral lesions on CTA)
- 4 patients lost of sight

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P= Positive = No more symptoms
N= Negative= None effect
M= Mild= Recurrency of symptoms
?= lost of sight
DISCUSSION
Ultrasonography

US allows diagnosis of anterolateral impingement when showing:
- **fibrous bands and/ hyperchoic nodule** (meniscoïd lesion)
- in the anterolateral recess (100%)
- +/- capsular thickening (67%) and synovits (52%).

US findings must be correlated to the clinical features (asymptomatic capsular thickenings of the anterolateral recess are frequent).

**Advantages:**
- excellent spatial resolution,
- availability,
- dynamic examination

**Limitations:**
- low case number in the study
- lack of gold-standard and comparison with asymptomatic patients
- no cartilage analysis,
- US multi-observer study
US-guided therapy

- Therapeutic effect due to combination of local anaesthesia, anti-inflammatory effect of corticosteroid and damaged-tissue disruption
- No local or general complications
- Allows complete rehabilitation and avoid CTA and surgery in 9 patients (33%)
- Represents the treatment of 50% of patients with complete rehabilitation

- No study versus placebo
US-guided therapy

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ANTEROLATERAL IMPINGEMENT?

- US
- Dynamic radiographs
- Hyperlaxity

Ligament cicatrization
Occult fractures
Tendinopathies

Diagnosis of anterolateral impingement

US-guided therapy

- Pain relief
- Pain recurrence
- No pain relief

Pain relief

OK

Pain recurrence

+-CTA

Arthroscopic debridement

No pain relief

CTA
Centre d'imagerie ostéo-articulaire
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